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Utah Agricultural Experiment Station
Logan, Utah

Mimeograph Sheet No. 201
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# U T A H  C O O P E R A T I V E  S N O W  S U R V E Y S

and

# W A T E R - S U P P L Y  F O R E C A S T S

1939

Cooperators

Utah Agricultural Experiment Station

Utah State Engineer

United States Weather Bureau

United States Forest Service

United States Bureau of Agricultural Engineering

by

George D. Clyde, Irrigation Engineer
(In Charge of Snow Surveys)

Utah State Agricultural Experiment Station

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# WATER SUPPLY FORECAST FOR UTAH, 1939

George D. Clyde, Irrigation Engineer
Utah Agricultural Experiment Station

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During the period from March 26 to April 1, snow surveys were completed on all of the Utah Cooperative snow courses. The water content in snow storage at this time may be taken as indicative of the April-September and July-September runoff with, of course, later modification of estimates in accordance with subsequent storms and temperature conditions.

This report presents:

1. Forecasts of July-September and April-September runoff for the streams on whose drainage areas snow surveys have been conducted for a sufficient number of years to make it possible to forecast stfeamflow quantitatively.

2. A brief statement of conditions on other watersheds of the state, based on available reports.

3. A water forecast summary by drainage basins.

4. A comparison of runoff from principal Utah streams.

5. Storage in reservoirs as of April 1.

6. Results of annual snow surveys grouped according to stream basins.

## Bear River Above Bear Lake.

The snow-cover measurements at the head of Bear River, Lost Lake, and the Goodman Ranch are all representative of the water in snow storage on the Bear River. The snow on the valley floor from Bear Lake to the Goodman Ranch, twenty miles above Evanston, has entirely disappeared. There will be no early spring runoff and the late spring runoff will be largely diverted above Stewart Dam for irrigation. The high snow cover is only 80 per cent of that in 1938. Conditions generally on this watershed are similar to those in 1934-35. The soil under the snow is saturated, but the absence of low snow will increase the runoff losses and make the April-May precipitation relatively ineffective as it effects the runoff. The runoff at Harer this year will probably not exceed 150,000 acre-feet for the April-September period and 40,000 acre-feet for the July-September period. Because of the early season little of this will be available for direct diversion into Bear Lake.

Bear Lake Drainage.

The snow cover on the drainage area directly tributary to Bear Lake is only 74 per cent of that in 1938 on the high watersheds, and there is no snow on the valley floor. Early melting of the snow cover has taken place, but little runoff has resulted. The soil under the snow is saturated. With normal precipitation and temperature conditions during April the yield to Bear Lake from its local drainage should be between 50,000 and 60,000 acre-feet.

Probable Rise of Bear Lake.

The rise in the level of Bear Lake depends upon the diversions into it from the Bear River. These diversions are controlled by the Utah Power and Light Company. The lake level is now at elevation 5914.6 feet and holds a usable supply of 794,000 acre-feet. The rise in the lake level this year will probably not exceed 1½ feet.

Logan River Drainage.

The deficiency of precipitation during March has completely changed the water supply prospects for northern Utah. The accumulated water in snow storage on March 1 was nearly normal, but the marked deficiency of precipitation during March resulted in a net loss to the snow storage by the first of April. The low snow cover averages 66 per cent of that in 1938 while the high cover is 73 per cent of that in 1938. The snow cover on the high watersheds (above 8,000 feet elevation) is approximately 58 per cent of a long time normal, and the April-September runoff will probably not be less than 96,000 nor more than 100,000 acre-feet. The July-September runoff will be between 31,000 and 33,000 acre-feet.

The maximum daily discharge in 1938 was 1,050 c.f.s. with a flow of not less than 600 c.f.s. for about two months. The September 30 discharge was 150 c.f.s. During 1939 the maximum flood discharge will probably not exceed 800 c.f.s. and the high water will be over by June 1. The late season flow should not be less than 130 c.f.s.

Cub River Drainage.

The snow cover at Franklin Basin is representative of the conditions on the Cub River Watershed. The snow cover at Franklin Basin this year is 82 per cent of that in 1938 and 57 per cent of a long time normal. The soil under the snow cover is saturated and the low snow melted with little rise in streamflow. There will be little spring high water and the late season flow will be considerably less than in 1938.

Maple, High, Summit, and Providence Creeks.

These drainages are all on the west side of the Bear River Range and are relatively short and steep. The low snow is entirely gone from these areas and

the cover at 7,000 feet elevation is only 77 per cent of that in 1938. There will be little high water and the early runoff will reduce the late season flow.

Blacksmith Fork Drainage Area.

The snow cover on the Blacksmith Fork drainage this year is much lighter than in 1938 particularly at the lower elevations. Pre-April melting has taken off all of the snow up to 6,500 feet elevation with little resulting runoff. The snow cover at Monte Cristo, Garden City Summit, and the Blake Ranger Station averages only 66 per cent of that in 1938. With normal precipitation and temperature the April-September runoff will probably not exceed 47,000 acre-feet and the July-September 14,000 acre-feet. The season is early, the low snow is gone, and no unusually high spring runoff is to be expected.

Little Bear River Drainage.

The Little Bear River watershed has an average elevation lower than the Blacksmith Fork. The Monte Cristo and Blake Ranger Station courses are indicative of the conditions on this watershed. The snow cover at these two stations averages 58 per cent of that in 1938. All the low snow has melted and the ground is saturated. The Hyrum reservoir is 68 per cent full and will fill completely before the runoff season is over.

Ogden River Drainage.

Measurements of snow cover at Geertsen Creek, Wheeler Basin, and Monte Cristo snow courses show an average snow cover only 73 per cent of that in 1938. Ogden Valley is entirely bare, but the soil is saturated. There has been considerable melting at the higher elevations. If normal temperature and precipitation prevails during April and May there will be little high water. The April-September runoff will probably not exceed 50,000 acre-feet with a July-September discharge approximately 7,500 acre-ft. The Pine View reservoir has a capacity of 41,000 acre-feet and contained, on April 1, only 10,650 acre-feet. With approximately 30,000 acre-feet yet to go before the reservoir is full, and with an early season which carries heavy early irrigation demands, it is doubtful if the Pine View reservoir will fill this season.

Weber River Drainage.

The major portion of the water in the Weber River comes from four main branches: Chalk Creek, Lost Creek, East Canyon, and the main Weber above Oakley. Snow courses are located on each of these tributaries except Lost Creek. At 7,000 feet elevation on Chalk Creek there was no snow on April 1. In 1938 the cover at this station contained 3.1 inches of water. The course at Smith and Morehouse, elevation 7,600 feet, had a snow cover 70 per cent of that in 1938, while at the Redden Mine, elevation 9,000 feet, the cover was 80 per cent of that in 1938. At Parley's Canyon summit near the head of East Canyon, elevation 7,500 feet, the snow cover was 85 per cent of that in 1938. The low snow is all gone

and the ground is saturated under the high snow cover. In the absence of unusually high temperatures little high water can be expected.

The amount, position, and condition of the snow cover on the Weber River watershed, this year, indicates a probable maximum runoff at Oakley of 100,000 acre-feet for the April-September period and 17,000 acre-feet for the July-September period.

The Echo Reservoir is only 50 per cent and the East Canyon 69 per cent full. With normal melting temperatures and precipitation both of these reservoirs should fill to capacity.

Salt Lake Watersheds

These watersheds include City, Emigration, Parley's, Big Cottonwood, and Little Cottonwood Creeks. The snow courses on these areas are: Parley's Canyon Summit, elevation 7,800 feet, Silver Lake, elevation 8,000 feet, and Mill D South Fork, elevation 7,400 feet. The water content of the snow at Mill D, Parley's Canyon Summit and Silver Lake on April 1 was 92, 85, and 77 per cent of that in 1938. The low snow cover has entirely melted and considerable melting took place on the higher areas during March. With normal spring precipitation and temperature no unusually high water should occur on these streams this year.

The April-September discharge of Big Cottonwood Creek in 1938 was 40,700 acre-feet with 7,500 acre-feet running off during the July-September period. During these periods in 1939 the runoff should be 30,000 and 6,600 acre-feet respectively.

Provo River and Utah Lake Drainage.

The snow cover on the headwaters of the Provo River, as indicated by the April 1 surveys, has a water content approximately 68 per cent of that in 1938, and approximately 54 per cent of the longtime average. There has been considerable melting of the snow at the higher elevations and most of the low snow has disappeared. The ground under the snow is saturated. With normal spring precipitation and temperature there should be no excessively high spring runoff this year.

The probable runoff of the Provo River this year will not exceed 100,000 acre-feet for the April-September period, or 29,000 acre-feet for the July-September period.

The melting this year is two to three weeks early. This, together with the absence of low snow cover, will materially reduce the amount of water that will reach Utah Lake. There is at present in Utah Lake 463,000 acre-feet available for use. Therefore, it is believed there will be an ample water supply for all users under the Utah Lake and Jordan River system. Water supply prospects can change quickly as is evidenced by the deficient March precipitation this year. Therefore, conservation in use should be practiced, so that a reserve may be built up in Utah Lake to protect the users against future dry years.

American Fork River Drainage

The snow storage on the American Fork River watershed is represented by snow measurements at the Dutchman Ranger Station, South Fork Ranger Station, Altamont and Timpanogas Divide snow courses. The snow cover at the Dutchman Ranger Station is about 78 per cent of that in 1938, while at the South Fork Ranger Station the ground is completely bare along the snow course. At Altamont the snow cover is only 51 per cent of that in 1938, and at Timpanogas Divide 60 per cent of that in 1938. There has been considerable pre-April melting at the high elevations and practically all of the low snow has disappeared. With a normal precipitation and temperature no excessively high water is to be expected and the late season flow from the American Fork River will probably be as much as 40 per cent less than in 1938.

Hobble, Payson, Santequin Creeks and Spanish Fork River.

The snow cover on these watersheds contain considerably less water on the high watersheds than they did in 1938, being only approximately 70 per cent of that year. The low snow cover has entirely disappeared, but the ground is saturated even under the high snow cover. The April-September runoff from these streams will probably not exceed 65 per cent of that in 1938, and there will be little, if any, excessive spring high flow from any of these streams.

Strawberry Reservoir.

The snow cover on the drainage above the Strawberry Reservoir is only 76 per cent of that in 1938. The hold-over storage in the Strawberry Reservoir as of April 1, 1939, was 88,180 acre-feet, which is about 7,000 acre-feet more than in 1938. The inflow to the reservoir will probably not exceed 75 per cent of that in 1938, but this inflow, together with the hold-over storage, should provide a full water supply for all the lands under this system during 1939.

San Pitch Drainage.

The snow cover on the west side of the Wasatch plateau, which drains into the San Pitch River, contains approximately 86 per cent as much water as in 1938. There has been considerable winter melting over the entire watershed. The low snow cover has entirely disappeared and the ground is saturated under the high cover. Due to the absence of low snow and the premature melting on the high water sheds, little excessive high spring flow should be expected. The April-September flow from streams tributary to the San Pitch cannot be expected to exceed 85 per cent of that in 1938.

Salina Creek Drainage.

The snow storage on the Salina Creek watershed, as measured at the Gooseberry Ranger Station snow courses, is approximately equal to that in 1938. All of the low snow has disappeared from the watershed so that the April-September runoff will be slightly less than in 1938. No excessively high spring flows are expected from this watershed.

Clear Creek Drainage.

The snow storage on this watershed is only 62 per cent of that in 1938. The April-September runoff will probably not exceed 60 per cent of that in 1938.

Main Sevier River Drainage.

Water in snow storage on the Sevier River above Salina averages 52 per cent of that in 1938. There has been considerable pre-April melting on this watershed. The ground under the high snow cover is saturated and the low areas are entirely bare. The absence of low snow will preclude any excessive high water on the watershed, and the deficiency of high snow will materially reduce the runoff available to the natural flow users. The natural flow on the Sevier River for the April-September period will probably not exceed 50 per cent of that in 1938. The storage reservoirs, however, are in much better condition than they were in 1938. The Otter Creek reservoir contains 44,800 acre feet, as compared to 40,000 last year. The Piute Reservoir is not quite as full as it was a year ago, containing 67,000 acre-feet this year, as against 78,000 acre-feet in 1938. The Sevier Bridge Reservoir, however, contained on April 1, 150,000 acre-feet as against 89,500 acre-feet in 1938, and the Gunnison contains 16,500 as against 18,500 in 1938.

Due to the absence of low snow on the Sevier River watershed little additional storage can be expected over that in the reservoirs on April 1.

Fillmore Drainage.

Snow cover on the Fillmore watersheds is approximately 67 per cent of that in 1938. All of the low snow has disappeared except on the extreme north slopes, and considerable pre-April melting has taken place on the high watersheds. No excessively high spring flow is to be expected and the runoff from these watersheds will probably not exceed 65 per cent of that in 1938.

Coal Creek Drainage

The high snow cover on the Coal Creek watershed this year contains only 56 per cent of that in 1938. The low snow cover has entirely disappeared, little snow remains at Wood's Ranch, and the entire west face of the Kolob Mountain is practically bare. Considerable pre-April melting has taken place on the high watersheds. Some of this will be converted into runoff, but the losses from the snow cover are expected to be unusually heavy.

The discharge of Coal Creek, near Cedar City, in 1938 was 32,100 acre-feet for April-September, and 4,100 acre-feet for July-September. The April-September runoff this year will probably not exceed 20,000 acre-feet nor the July-September 3,000 acre-feet. Careful conservation, therefore, will be necessary by the users of water from this stream because of the fact that no storage facilities are available on this watershed.

Beaver River Drainage

The snow cover on the Beaver River watershed is approximately 58 per

cent of that in 1938. Considerable winter melting has taken place on the high areas and the low areas are practically bare. Little high water is to be expected. The April-September runoff will probably not exceed 21,000 acre-feet, and the July-September period will yield not to exceed 6,000 acre-feet.

Virgin River Watershed.

The snow cover on the watershed of the Virgin River is only 54 per cent of that in 1938. The low cover has entirely disappeared and considerable pre-April melting has taken place on the higher areas. Part of this snow, which has melted prematurely, will appear as runoff, but it is expected that the losses this year will be heavy. The runoff from the Virgin River is greatly affected by summer rains, but outside of such storms the Virgin River can be expected to discharge at Virgin, during April-September of this year, not less than 70,000 acre-feet, and for July-September not less than 12,000 acre-feet.

Salt Creek near Nephi.

There are no snow courses on this watershed, but the Mammoth Ranger Station is located about fifteen miles east and gives a fair condition of the snow cover. The snow cover at this course indicates a water supply of approximately 75 per cent of that in 1938. The low snow cover on this watershed has entirely disappeared with little rise in streamflow and, therefore, little excessive high water is to be expected. The April-September runoff will probably not exceed 70 per cent of that in 1938.

Price River Drainage.

The snow courses at Staley's Ranch, elevation 7,600 feet, Dry Valley Divide, 7,000 feet, and Clear Creek, elevation 8,150 feet, were bare on April 1. The north slopes of the watershed in the vicinity of the Scofield reservoir were covered with snow, but the entire valley floor was bare. The high snow cover, as indicated by the measurements at the Mammoth Ranger Station, is 75 per cent of that in 1938. The total absence of snow at the lower elevations, and the pre-April melting on the higher watersheds will materially reduce the flow of the Price River Drainage above the Scofield Reservoir. The hold-over storage in the Scofield Reservoir, as of April 1, was 12,500 acre-feet. The absence of low snow on all of the Price River watersheds, and the earliness of the season will materially reduce runoff available for additional storage. Probably not more than 5,000 acre-feet of additional storage can be expected from the Price River above the Scofield Reservoir this year.

The runoff of the Price River at Helper is affected by the discharge of the Scofield Reservoir and, therefore, difficult to predict. The Indian Canyon snow course at the head of Willow Creek, elevation 9,100 feet, shows only 45 per cent of the water content which the same snow cover contained in 1938. At the Mammoth Ranger Station on the headwaters of Fish Creek the snow cover was 75 per cent of that in 1938. The complete absence of low snow eliminates any possibility of excessively high water, and the deficiency of high snow will probably reduce the runoff from the Price River to not more than 45,000 acre-feet during the April-September period, and 15,000 for the July-September period.

Huntington, Cottonwood and Ferron Creeks.

The snow courses representing these watersheds are all high and cover the area from the head of the Price River on the north to the head of Ferron Creek on the south. The snow cover on these watersheds is represented by measurements at the head of Huntington Creek and at the Seeley Creek Ranger Station. Both of these are high courses. The average snow cover on the areas above 9,000 foot elevation is 82 per cent of that in 1938. The low cover has completely disappeared. There should be little excessively high water from any of these streams this year and the runoff from Huntington Creek and Cottonwood Creek for the periods April-September and July-September will probably not exceed the following:

| | April-September | July-September |
|---|---|---|
| Huntington Creek | 45,000 | 12,000 |
| Cottonwood Creek | 50,000 | 8,000 |

Ashley Creek.

Snow cover on the watersheds draining into the Ashley Valley, as indicated by the conditions at the King's Cabin snow course, is only 59 per cent of that in 1938. The low snow cover has entirely disappeared and considerable pre-April melting has taken place on the high watersheds. The runoff on the Ashley Creek will be considerably less than in 1938 and will probably not exceed 25,000 acre-feet for the April-September runoff, and 11,000 acre-feet for the July-September runoff. The absence of low snow and the premature melting of high snow precludes any possibility of excessively high water from these streams this year.

Uinta River and White Rocks Creek.

Water in snow storage on these watersheds is considerably less than in 1938, averaging only 57 per cent of that in 1938. The low snow has entirely disappeared and considerable pre-April melting has taken place on the higher areas. The runoff on the White Rocks Creek for April-September will probably not exceed 31,000 acre-feet, and for July-September, in the absence of abnormal spring precipitation and temperatures, a total of 14,000 acre-feet. The late season runoff on this watershed is greatly affected by summer rains and, therefore, the forecast for July-September may have to be modified considerably, depending on the occurrence of summer rains.

The Uintah river at Neola should yield 45,000 acre-feet during April-September and 20,000 acre-feet during July-September.

Lake Fork

The snow cover on the high areas at the head of Lake Fork is only 54 per cent of that in 1938. It is estimated that in light of the almost complete absence of low snow that the runoff from Lake Fork at Moon Lake will not exceed 50 per cent of that in 1938, and there will be little, if any, high spring flow.

Duchesne River Drainage.

This stream heads in the west end of the Uintah Mountains. There are no snow courses directly on this area, but the Lost Lake course on the Provo is fairly representative of the conditions on the headwaters of the Duchesne. The snow cover at Lost Lake this year is 79 per cent of that in 1938. The runoff from the Duchesne at Tabiona for April-September for this year would probably not exceed 80,000 acre-feet for the April-September and 18,000 acre-feet for the July-September runoff.

North Side of the Uintah Mountains.

Only two snow courses are available on the streams draining the north side of the Uintah Mountains. One is located near the head of Black's Fork, and the other is located near the Hole-in-the-Rock Ranger Station. The average snow cover at these two stations is 80 per cent of that in 1938. The low snow cover has largely disappeared and there has been premature melting on the higher areas. The runoff from the streams draining the north side of the Uintah mountains during 1939, therefore, should be characterized by an absence of spring high water and total seasonal flow not to exceed 75 per cent of that in 1938.

La Sal Mountain Area

The snow cover on the La Sal National Forest this year is 87 per cent of that in 1938. There is a deficiency of snow and premature melting has taken place on the higher elevations. The water supply for irrigation purposes this season will probably not exceed 75 per cent of that in 1938, but it is believed that with careful use that no serious shortage will result.

Blue Mountain Area.

The snow cover on this area is 96 per cent of that in 1938. The deficiency of low snow, however, and some early melting will reduce the runoff from this area considerably under that of 1938. The runoff will probably not exceed 85 per cent of that in 1938.

## SUMMARY

It is seen from the foregoing detailed analysis that the snow cover on the watersheds of Utah this year is very spotted; that it contains considerably less water than in 1938; that the low snow has melted on all of the watersheds of the state; and that there has been considerable pre-April melting on the high areas. The ground under the snow cover is uniformly saturated. In spite of the premature melting there has been little rise in the streams indicating that the snow cover losses this year will be relatively heavy. In general the water content of the snow cover over the state will vary from 50 to 80 per cent of that in 1938, the most severe shortage occurring in southern Utah on the Sevier and Virgin rivers, and in eastern Utah on the Uintah Basin streams, except the Duchesne and on the Price River. The conditions on the watersheds in central and northern Utah are somewhat better.

The runoff during 1938 on most of the watersheds in the state was fairly good and no serious water shortage developed. This year, however, with a snow cover from 50 to 80 per cent of that in 1938 some serious water shortages are likely to develop on those streams which have no storage facilities. The water users holding primary rights to natural flow will suffer most greatly. Those having storage rights, or a combination of storage rights and primary rights will suffer no water shortage during the coming season.

Although the pending water shortage in Utah this year is not nearly as serious as it was in 1934, careful conservation of our supplies are justified and all water users should begin at once to make plans for the conservation of their water during this coming irrigation season. Ditches and canals should be cleaned early so that the early flow may be fully utilized. Leaky headgates should be repaired.

Due to the absence of low snows on all of the watersheds of the state unusually high water during the spring runoff period is not to be expected on any of the watersheds. However, high runoff for a few days is possible if a combination of temperature and spring precipitation develops which will melt the high snow at a rapid rate. All owners of reservoirs should, therefore, examine their spillways and outlet works, clean and repair the trash racks, and see that the gate operating devices are in working order.

The following tables give a brief summary of the water supply forecasts, reservoir storage, and the snow cover data for 1939.

Table 1

-- FORECAST SUMMARY --

| NAME OF STREAM OR BASIN | Run-off in 1000's of Acre-Feet | | | | | | | | Expected Runoff for 1939 in per-cent of 1938 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1939 | | 1938 | | 1937 | | 1936 | | | |
| | I | II | I | II | I | II | I | II | I | II |
| BEAR RIVER | | | | | | | | | | |
| Bear River at Stewart Dam* | | | | | 267.8 | | 358.1 | | 60.0 | |
| Bear Lake Drainage* | | | | | 91.1 | | 121.6 | | 75.0 | |
| CACHE VALLEY STREAMS | | | | | | | | | | |
| Miscellaneous Small Streams | | | | | | | | | 80.0 | |
| Logan River | 98.0 | 32.0 | 147.1 | 43.4 | 199.4 | 39.7 | 200.0 | 51.1 | 66.6 | 73.7 |
| Blacksmith Fork River | 45.0 | 14.0 | 59.4 | 18.6 | 58.6 | 17.6 | 90.0 | 20.1 | 75.8 | 75.4 |
| Little Bear River | | | | | | | | | 58.0 | |
| WEBER RIVER | | | | | | | | | | |
| South Fork of Ogden River | 46.0 | 7.5 | 60.7 | 8.4 | 62.9 | 8.1 | 109.5 | 8.7 | 75.8 | 89.5 |
| Weber River at Oakley | 100.0 | 17.0 | 132.4 | 21.9 | 107.8 | 17.6 | 160.5 | 27.9 | 75.5 | 77.6 |
| SALT LAKE CITY WATERSHEDS | | | | | | | | | | |
| Big Cottonwood Creek | 30.0 | 6.0 | 40.7 | 7.5 | 32.6 | 6.2 | 40.6 | 7.2 | 73.7 | 80.0 |
| PROVO RIVER AND UTAH LAKE | | | | | | | | | | |
| American Fork River | | | | | | | | | 70.0 | |
| Provo River | 100.0 | 29.0 | 180.8 | 49.6 | 178.2 | 47.7 | 184.0 | 43.9 | 55.3 | 58.4 |
| Hobble Creek | | | | | | | | | 65.0 | |
| Spanish Fork River | | | | | | | | | 65.0 | |
| SEVIER RIVER | | | | | | | | | | |
| San Pitch Tributaries | | | | | | | | | 85.0 | |
| Salina Creek | | | | | | | | | 90.0 | |
| Clear Creek | | | | | | | | | 60.0 | |
| East Fork of Sevier | | | | | | | | | 50.0 | |
| Sevier River at Kingston | 25.0 | 6.0 | 70.9 | 10.4 | 87.6 | 14.2 | 23.5 | 11.8 | 35.3 | 57.7 |
| INDEPENDENT STREAMS | | | | | | | | | | |
| Fillmore Watersheds | | | | | | | | | 65.0 | |
| Beaver River | 21.0 | 6.0 | 36.0 | 7.6 | 47.7 | 8.8 | 41.2 | 11.6 | 58.3 | 78.9 |
| Coal Creek near Cedar City | 18.0 | 3.0 | 32.1 | 4.1 | 32.8 | 3.96 | 16.1 | 5.4 | 56.1 | 73.2 |
| UINTAH BASIN STREAMS | | | | | | | | | | |
| Duchesne River at Tabiona | 80.0 | 18.0 | 124.9 | 25.4 | 122.7 | 26.4 | 140.0 | 33.0 | 64.1 | 70.9 |
| Whiterocks Creek at Whiterocks | 35.0 | 14.0 | 87.4 | 26.2 | 82.3 | 24.8 | 52.7 | 26.0 | 40.0 | 53.4 |
| Ashley Creek at Vernal | 25.0 | 11.0 | 66.4 | 19.2 | 67.7 | 18.3 | 33.3 | 13.1 | 37.7 | 57.3 |

*Total for year October to September

I- April to September, inclusive
II- July to September, inclusive

Table I (cont.)

-- FORECAST SUMMARY --

| NAME OF STREAM OR BASIN | Run-off in 1000's of Acre Feet | | | | | | | | Expected Run-off for 1939 in Percent of 1938 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1939 | | 1938 | | 1937 | | 1936 | | | |
| | I | II | I | II | I | II | I | II | I | II |
| NORTH SIDE UINTAH MOUNTAINS | | | | | | | | | 75.0 | |
| PRICE RIVER | 45.0 | 15.0 | 73.4 | 23.4 | 105.4 | 27.6 | 80.0 | 20.9 | 61.3 | 64.1 |
| Price River | 45.0 | 12.0 | 56.9 | 14.6 | 62.2 | 15.5 | 74.8 | 14.9 | 79.1 | 82.2 |
| Huntington Creek | 50.0 | 8.0 | 60.3 | 9.0 | 62.1 | 12.2 | 79.3 | 13.0 | 82.9 | 88.9 |
| VIRGIN RIVER | | | | | | | | | | |
| Virgin River | 60.0 | 12.0 | 124.6 | 22.3 | 148.4 | 26.0 | 63.3 | 27.9 | 48.2 | 53.8 |
| LA SAL MOUNTAINS | | | | | | | | | | |
| Mill Creek | | | | | | | | | 75.0 | |
| MONTICELLO AREA | | | | | | | | | | |
| Montezuma Creek | | | | | | | | | 85.0 | |
| SALT CREEK at Nephi | | | | | 21.0 | 4.4 | 23.7 | 5.5 | No Report | |

I - April to September, inclusive
II - July to September, inclusive

Table II

## COMPARISON OF RUNOFF FROM PRINCIPAL UTAH STREAMS
In 1000's of Acre-Feet

| NAME OF STREAM | April-September Runoff | | | | | | July-September Runoff | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Average | 1935 | 1936 | 1937 | 1938 | Forecast for 1939 | Average | 1935 | 1936 | 1937 | 1938 | Forecast for 1939 |
| Ashley Creek near Vernal | 64.0 | 53.5 | 53.4 | 67.7 | 66.5 | 25.0 | 15.9 | 12.9 | 13.1 | 18.3 | 19.2 | 11.0 |
| Bear River at Harer | 286.0 | 118.5 | 356.2 | | 295.6 | 150.0 | 59.7 | 27.3 | 57.2 | | 55.0 | 40.0 |
| Beaver River at Beaver | 33.3 | 30.3 | 41.2 | 47.7 | 36.0 | 21.0 | 7.9 | 6.9 | 11.6 | 8.8 | 7.7 | 6.0 |
| Big Cottonwood near Salt Lake City | 45.0 | 33.7 | 40.6 | 52.6 | 40.7 | 30.0 | 11.5 | 6.8 | 7.2 | 6.2 | 7.5 | 6.0 |
| Blacksmith Fork at Hyrum | 72.5 | 35.6 | 90.0 | 58.6 | 59.4 | 45.0 | 24.2 | 11.3 | 20.1 | 17.6 | 18.6 | 14.0 |
| Coal Creek near Cedar City | | | 16.1 | 32.8 | 32.1 | 18.0 | | 4.4 | 5.4 | 4.0 | 4.1 | 3.0 |
| Cottonwood Creek at Orangeville | 72.1 | 69.6 | 69.3 | 62.1 | 60.3 | 50.0 | 15.5 | 9.9 | 12.9 | 12.6 | 9.0 | 8.0 |
| Duchesne River at Tabiona | 114.3 | 73.7 | 140.0 | 107.2 | 124.9 | 80.0 | 28.0 | 15.9 | 33.0 | 26.4 | 25.4 | 18.0 |
| Huntington Creek near Huntington | 62.4 | 53.3 | 74.8 | 62.2 | 56.9 | 45.0 | 15.6 | 13.2 | 14.9 | 15.5 | 14.6 | 12.0 |
| Logan River at Logan | 164.7 | 114.4 | 200.0 | 119.4 | 147.1 | 98.0 | 54.0 | 36.2 | 51.1 | 39.7 | 43.4 | 32.0 |
| Ogden River, S. Fork near Huntsville | 64.7 | 46.6 | 109.5 | 62.9 | 60.7 | 46.0 | 8.6 | 6.1 | 8.7 | 8.1 | 8.4 | 7.5 |
| Price River near Helper | 85.2 | 44.9 | 80.0 | 105.4 | 73.4 | 45.0 | 16.7 | 20.9 | 20.9 | 27.6 | 23.4 | 15.0 |
| Provo River at Provo | 185.9 | 114.0 | 184.0 | 178.2 | 180.8 | 100.0 | 50.1 | 32.7 | 43.8 | 47.6 | 49.6 | 29.0 |
| Sevier River near Kingston | 57.6 | 27.5 | 23.3 | 87.6 | 70.9 | 25.0 | 15.5 | 3.7 | 11.8 | 14.2 | 10.4 | 6.0 |
| Uinta River near Neola | 89.4 | 81.1 | 88.2 | 115.3 | 131.1 | 45.0 | 38.4 | 31.2 | 45.7 | 52.3 | 48.1 | 20.0 |
| Virgin River at Virgin | 95.8 | 89.0 | 63.3 | 148.4 | 124.6 | 60.0 | 31.0 | 17.6 | 27.9 | 26.0 | 22.3 | 12.0 |
| Weber River at Oakley | 148.7 | 127.0 | 160.5 | 107.8 | 132.4 | 100.0 | 30.5 | 20.3 | 27.9 | 17.6 | 21.9 | 17.0 |
| Whiterocks River near Whiterocks | 52.7 | 55.7 | 52.7 | 82.3 | 87.4 | 35.0 | 19.1 | 14.0 | 26.0 | 24.8 | 26.2 | 14.0 |

TABLE III

AVAILABLE STORAGE IN PRINCIPAL RESERVOIRS

ACRE-FEET - APRIL 1.

| Reservoir | Maximum Capacity | Content, April 1, in Acre-feet | | | | | | Per Cent Filled |
|---|---|---|---|---|---|---|---|---|
| | | 1934 | 1935 | 1936 | 1937 | 1938 | 1939 | |
| Bear Lake | 1,420,000 | 492,500 | 161,350 | 71,000 | 396,750 | 582,700 | 794,000 | 56 |
| Utah Lake | 830,000 | 246,000 | 118,000 | 141,000 | 303,000 | 392,900 | 463,000 | 56 |
| Echo Reservoir | 74,000 | 35,780 | 26,440 | 15,400 | 49,000 | 55,470 | 37,150 | 50 |
| East Canyon | 28,000 | 14,700 | 7,300 | 17,400 | 20,000 | 10,640 | 19,310 | 69 |
| Strawberry | 278,000 | 40,230 | 12,720 | 15,100 | 61,500 | 81,580 | 88,180 | 32 |
| Scofield | 30,000 | 10,000 | 2,000 | 12,000 | 15,750 | 8,000 | 17,000 | 57 |
| Rocky Ford | 25,070 | 8,500 | 6,200 | 10,266 | 20,000 | 19,600 | 18,600 | 74 |
| Sevier Bridge | 236,000 | 48,190 | 29,250 | 41,680 | 67,600 | 89,500 | 150,000 | 66 |
| Piute | 65 to 90,000 | 27,600 | 27,380 | 39,290 | 45,500 | 78,000 | 67,000 | 74 |
| Otter Creek | 52,600 | 17,600 | 14,600 | 17,050 | 22,700 | 40,000 | 44,800 | 85 |
| Gunnison | 20,000 | | 1,500 | 3,500 | 20,000 | 18,500 | 16,500 | 83 |
| Hyrum | 14,600 | | | | 9,721 | 10,430 | 9,950 | 58 |
| Pine View | 41,000 | | | | 13,263 | 26,100 | 10,650 | 26 |

UTAH COOPERATIVE SNOW SURVEYS - 1938-39
(Data for all Snow Courses)

| SNOW COURSES BY DRAINAGE AREAS | | Elevation in Feet | Date of Survey | Depth of Snow in Inches | Water Content of Snow in Inches | Density in Per cent | Corresponding Water Content | | | Normal Water Content in Snow to April 1 in Inches | Water Content of Snow on Date of Survey in % of Normal | Corresponding Percent Last Year | Moisture Condition Under Snow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1936 | 1937 | 1938 | | | | |
| CACHE VALLEY STREAMS: | | | | | | | | | | | | | |
| Franklin Basin(Idaho) | 1 | 8200 | 3/31/39 | 49.7 | 20.4 | 41.0 | 39.7 | 20.8 | 24.8 | 35.5 | 57.5 | 69.8 | Moist |
| Tony Grove Lake | 2 | 8500 | 3/31/39 | 57.7 | 25.2 | 43.7 | 50.5 | 32.5 | 36.5 | 45.1 | 55.9 | 71.8 | Moist |
| Tony Grove Ran. Sta. | 3 | 6250 | 3/31/39 | 13.4 | 5.5 | 41.0 | 23.5 | 15.2 | 11.4 | 11.3 | 48.7 | 100.8 | Wet |
| Spring Hollow No. 3 | 4 | 7000 | 4/1/39 | 24.7 | 8.5 | 34.4 | 20.6 | 16.2 | 14.5 | 19.0 | 44.7 | 76.3 | Moist |
| Spring Hollow No. 4 | 5 | 8000 | 4/1/39 | 57.9 | 19.4 | 33.5 | 34.8 | 25.0 | 21.9 | 32.7 | 59.4 | 67.0 | Moist |
| Mount Logan | 6 | 9000 | 4/1/39 | 55.3 | 20.8 | 39.0 | 58.3 | 27.4 | 27.5 | 39.1 | 53.2 | 70.4 | Moist |
| Smithfield Spring | 7 | 7000 | 4/1/39 | 43.1 | 17.8 | 41.5 | | 23.8 | 23.1 | -- | -- | -- | Moist |
| Blacksmith Fork | 8 | 8400 | Abandoned | | | | 16.3 | 10.9 | 18.0 | | | | |
| Garden City Summit | 9 | 8200 | 3/27/39 | 46.1 | 16.7 | 36.2 | 33.9 | 18.5 | 20.4 | 24.4 | 68.5 | 83.6 | Wet |
| Blake Ranger Station | 12-A | 8000 | 4/1/39 | 51.3 | 11.5 | 36.7 | 22.1 | 13.3 | 23.6 | -- | -- | -- | -- |
| BEAR RIVER | | | | | | | | | | | | | |
| Garden City Summit | 9 | 8200 | 3/27/39 | 46.1 | 16.7 | 36.2 | 33.9 | 18.5 | 20.4 | 24.4 | 68.5 | 83.6 | Wet |
| Headwaters of Bear R. | 10 | 8600 | 3/25/39 | 22.2 | 9.6 | 43.2 | 14.2 | 8.2 | 7.9 | -- | -- | -- | -- |
| Goodman Ranch | 10-A | 7900 | 4/1/39 | No | Snow | | | 3.7 | 5.9 | | | | |
| Monte Cristo Ran. Sta. | 12 | 9000 | 3/30/39 | 55.6 | 20.3 | 37.9 | 39.6 | 18.8 | 30.7 | 20.4 | 99.5 | 150.5 | -- |
| OGDEN RIVER: | | | | | | | | | | | | | |
| Huntsville-Wheeler Div | 11-A | 5775 | 3/30/39 | 10.9 | 3.6 | 33.0 | 18.1 | 15.0 | 4.0 | 11.1 | 32.4 | 36.1 | Wet |
| Monte Cristo Ran. Sta. | 12 | 9000 | 3/30/39 | 55.6 | 20.3 | 37.9 | 39.6 | 18.8 | 30.7 | 20.4 | 99.5 | 150.5 | -- |
| Blake Ranger Station | 12-A | 8000 | 4/1/39 | 51.3 | 11.5 | 36.7 | 22.1 | 13.3 | 23.6 | -- | -- | -- | -- |
| Geertsen Creek | 12-B | 8200 | 3/29/39 | 40.0 | 14.9 | 37.2 | 27.5 | 25.0 | 17.2 | -- | -- | -- | Wet |
| WEBER RIVER: | | | | | | | | | | | | | |
| Parley's Canyon Summit | 15 | 7500 | 3/30/39 | 40.6 | 14.6 | 36.0 | 24.0 | 19.1 | 17.2 | 21.4 | 68.2 | 80.3 | Wet |
| Beaver Creek Ran. Sta. | 24 | 7500 | 3/29/39 | 12.8 | 4.6 | 35.9 | 14.0 | 11.0 | 8.5 | 10.5 | 43.8 | 81.0 | -- |
| Washington Long Lake | 27 | 10300 | 3/27/39 | 68.2 | 24.4 | 35.8 | 43.5 | 33.6 | 30.6 | 43.1 | 56.6 | 71.2 | -- |
| Airway Beacon-Chalk Cr. | 29 | 7000 | 3/31/39 | No | Snow | | 12.9 | 6.0 | 3.1 | | | | |
| Smith and Morehouse | 30 | 7600 | 3/28/39 | 28.7 | 9.9 | 34.5 | 19.3 | 13.7 | 14.1 | 14.9 | 66.4 | 94.7 | Wet |

Table IV (Con'd)

UTAH COOPERATIVE SNOW SURVEYS - 1938-39
(Data for all Snow Courses)

| SNOW COURSES BY DRAINAGE AREAS | | Elevation in Feet | Date of Survey | Depth of Snow in Inches | Water Content of Snow in Inches | Density in Per cent | Corresponding Water Content 1936 | 1937 | 1938 | Normal Water Content in Snow to April 1st in inches | Water Content of Snow on Date of Survey in % of Normal | Corresponding Percent Last Year | Moisture Condition Under Snow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WEBER RIVER: (Cont.) | | | | | | | | | | | | | |
| Redden Mine (Upper) | 31 | 9000 | 3/29/39 | 46.6 | 17.7 | 38.0 | 29.1 | 22.1 | 21.4 | ) 24.2 | 70.7 | 88.1 | Wet |
| Redden Mine (Lower) | 31-A | 8500 | 3/29/39 | 42.6 | 16.5 | 38.7 | 25.1 | 21.8 | 21.7 | ) | | | |
| SALT LAKE WATERSHEDS: | | | | | | | | | | | | | |
| Parrish Creek Summit | 13 | 8000 | 3/29/39 | 47.2 | 17.8 | 37.7 | 37.7 | 29.7 | 24.5 | -- | -- | -- | Wet |
| BarnardCreek | 13-A | 8000 | 3/28/39 | 57.6 | 21.0 | 36.5 | 42.0 | 33.4 | 24.9 | -- | -- | -- | Wet |
| Hornet Creek | 13-B | 8100 | | Abandoned | | | | 18.8 | | | | | |
| Lamb's Canyon | 14 | 6600 | 4/4/39 | 27.0 | 10.0 | 37.0 | 22.7 | 18.8 | 16.0 | | | | |
| Parley's Canyon Summit | 15 | 7500 | 3/30/39 | 40.6 | 14.6 | 36.0 | 24.0 | 19.1 | 17.2 | 21.4 | 68.2 | 80.3 | |
| Silver Lake | 16 | 8725 | 3/29/39 | 54.8 | 20.5 | 37.4 | 35.5 | 24.7 | 26.7 | -- | -- | -- | Wet |
| Mill D South Fork | 16-A | 7400 | 3/29/39 | 45.4 | 17.3 | 38.2 | | 19.9 | 18.8 | -- | -- | -- | -- |
| PROVO RIVER & UTAH LAKE: | | | | | | | | | | | | | |
| Dutchman Ranger Sta. | 17 | 7500 | 3/30/39 | 37.9 | 14.1 | 37.2 | 28.7 | 25.8 | 18.1 | 26.5 | 53.2 | 68.3 | -- |
| Timpanogos Cave Camp | 18 | 5500 | | No | Snow | | N.S. | N.S. | N.S. | | | | |
| South Fork Ranger Sta. | 19 | 6100 | | No | Snow | | 10.6 | 7.5E. | Patch | | | | |
| Camp Altamont | 20 | 7300 | 3/26/39 | 29.2 | 10.1 | 44.6 | 22.0 | 25.3 | 19.2 | -- | -- | -- | -- |
| Timpanogos Loop Road D. | 21 | 8200 | 3/26/39 | 39.7 | 15.8 | 39.8 | 28.1 | 32.2 | 26.5 | -- | -- | -- | -- |
| Aspen Grove | 21-A | 6900 | 3/26/39 | 26.1 | 10.7 | 41.0 | | 26.7 | 17.0 | -- | -- | -- | -- |
| Y.L.M.I.A. Site | 21-B | 6000 | 3/26/39 | 15.9 | 5.5 | 38.1 | | 16.0 | 7.2 | -- | -- | -- | -- |
| Hobble Creek Summit | 22 | 7300 | 4/1/39 | 19.7 | 7.6 | 38.6 | 20.7 | 17.6 | 11.7 | -- | -- | -- | Wet |
| Daniels-Strawberry Sum. | 23 | 8000 | 3/28/39 | 51.2 | 10.2 | 38.7 | 19.4 | 20.9 | 15.9 | 21.5 | 47.4 | 73.9 | Wet |
| Beaver Creek Ranger S. | 24 | 7500 | 3/29/39 | 12.8 | 4.6 | 35.9 | 14.3 | 11.0 | 8.5 | 10.5 | 43.8 | 81.0 | -- |
| Soapstone Ranger Sta. | 25 | 7800 | 3/25/39 | 25.7 | 7.3 | 28.4 | 18.3 | 12.0 | 12.0 | 15.2 | 48.0 | 79.0 | -- |
| Trial Lake | 26 | 9800 | 3/26/39 | 59.0 | 21.3 | 36.1 | 37.2 | **28.9** | **27.9** | 36.3 | 58.7 | **76.8** | -- |
| Washington Long Lake | 27 | 10300 | 3/27/39 | 68.2 | 24.4 | 35.8 | 43.5 | 33.6 | 30.6 | 43.1 | 56.6 | 71.2 | -- |
| Lost Lake | 28 | 9900 | 3/27/39 | 57.2 | 19.6 | 34.3 | 34.5 | 27.6 | 24.8 | 33.8 | 58.0 | 73.4 | -- |
| STRAWBERRY RESERVOIR: | | | | | | | | | | | | | |
| Daniels-Strawberry Sum. | 23 | 8000 | 3/28/39 | 51.2 | 10.2 | 38.7 | 19.4 | 20.9 | 15.9 | 21.5 | 47.4 | 73.9 | -- |

Table IV (Cont.)

UTAH COOPERATIVE SNOW SURVEYS - 1938-39
(Data for all Snow Courses)

| SNOW COURSES BY DRAINAGE AREAS | Course No. | Elevation in Feet | Date of Survey | Depth of Snow in Inches | Water Content of Snow in Inches | Density in per cent | Corresponding Water Content 1936 | 1937 | 1938 | Normal Water Content in Snow to April 1st in In. | Water Content of Snow on Date of Survey in % of Normal | Corresponding Percent Last Year | Moisture Cond. Under Snow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STRAWBERRY RESERVOIR: (Cont'd) | | | | | | | | | | | | | |
| East Portal | 33 | 7560 | 3/31/39 | 21.1 | 8.8 | 41.7 | 19.2 | 17.4 | 12.0 | -- | -- | -- | -- |
| East Portal-Strawberry Divide | 33-A | 8000 | 3/31/39 | 45.4 | 17.8 | 39.2 | 31.7 | 25.6 | 19.4 | -- | -- | -- | -- |
| NORTH SIDE UINTAH MTS.: | | | | | | | | | | | | | |
| Hewinta Ranger Station | 34 | 9500 | 3/25/39 | 29.1 | 6.3 | 21.6 | 15.1 | 8.4 | 7.1 | -- | -- | -- | -- |
| Hole-in-the-Rock | 35 | 9150 | 3/22/39 | 19.3 | 5.6 | 29.0 | 4.0 | 5.5 | 7.3 | -- | -- | -- | -- |
| SOUTH SIDE UINTAH MTS.: | | | | | | | (Est.) | (Est.) | | | | | |
| Lake Fork Mountain | 36 | 10500 | 3/22/39 | 29.0 | 5.1 | 17.6 | 15.8 | 14.1 | 9.5 | -- | -- | -- | -- |
| Paradise Park | 37 | 10500 | 3/21/39 | 28.8 | 7.3 | 25.3 | 10.7 | 17.5 | 12.3 | -- | -- | -- | Wet |
| Mosby Mountain No. 1 | 38 | 9700 | 3/22/39 | 22.4 | 6.1 | 27.2 | 9.7 | 13.5 | 10.7 | -- | -- | -- | -- |
| Mosby Mountain No. 2 | 38-A | 9500 | 3/22/39 | 26.4 | 6.6 | 25.0 | 9.9 | 16.9 | 12.3 | -- | -- | -- | Wet |
| King's Cabin No. 1 | 39 | 8800 | 3/17/39 | 32.3 | 6.7 | 20.7 | 9.8 | 12.4 | 11.7 | ) 12.6 | 52.4 | 88.2 | -- |
| King's Cabin No. 2 | 39-A | 8600 | 3/17/39 | 28.8 | 6.4 | 22.2 | 10.9 | 12.3 | 10.4 | ) | | | |
| Indian Canyon | 40 | 9100 | 3/29/39 | 24.0 | 5.4 | 22.5 | 8.3 | 14.3 | 12.4 | -- | -- | -- | -- |
| PRICE RIVER: | | | | | | | | | | | | | |
| Indian Canyon | 40 | 9100 | 3/29/39 | 24.0 | 5.4 | 22.5 | 8.3 | 14.3 | 12.4 | -- | -- | -- | -- |
| Gooseberry Reservoir S. | 41 | 8700 | 3/31/39 | 40.4 | 16.0 | 39.6 | 33.5 | 24.2 | 20.5 | 28.3 | 56.5 | 72.4 | Wet |
| Mammoth Ranger Station | 42 | 8800 | 3/30/39 | 41.8 | 16.8 | 40.2 | 31.2 | 26.8 | 22.4 | 29.0 | 57.9 | 77.2 | Wet |
| Staley Ranch | 42-A | 7600 | | No | Snow | | 11.8 | 10.7 | 7.3 | | | | |
| Dry Valley Divide | 42-B | 7800 | | No | Snow | | 13.2 | 11.5 | 12.3 | | | | |
| Clear Creek | 42-C | 8150 | | No | Snow | | 13.0 | 12.1 | 9.4 | | | | |
| Huntington Horseshoe | 43 | 9800 | 3/31/39 | 56.4 | 21.8 | 38.7 | 37.6 | 28.9 | 26.1 | 31.8 | 68.6 | 82.2 | -- |
| FILLMORE: | | | | | | | | | | | | | |
| Pine Creek-Chalk | 49 | 8500 | 3/27/39 | 28.4 | 10.6 | 37.3 | 10.7 | 16.2 | 15.7 | -- | -- | -- | -- |
| HUNTINGTON, COTTONWOOD, AND FERRON CREEKS: | | | | | | | | | | | | | |
| Huntington Horseshoe | 43 | 9800 | 3/31/39 | 56.4 | 21.8 | 38.7 | 37.6 | 28.9 | 26.1 | 31.8 | 68.6 | 82.2 | -- |

Table IV (cont.)

UTAH COOPERATIVE SNOW SURVEYS - 1938-39
(Data for all Snow Courses)

| SNOW COURSES BY DRAINAGE AREAS | Course No. | Elevation in Feet | Date of Survey | Depth of Snow in Inches | Water Content of Snow in Inches | Density in Per cent | Corresponding Water Content | | | Normal Water Content in Snow to April 1st in Inches | Water Content of Snow on Date of Survey in % of Normal | Corresponding Percent Last Year | Moisture Condition Under Snow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1936 | 1937 | 1938 | | | | |
| HUNTINGTON, COTTONWOOD & FERRON CREEKS: (Cont'd) | | | | | | | | | | | | | |
| G.F.E.S. Alpine | 47 | 10,240 | 3/29/39 | 55.6 | 20.5 | 36.8 | 29.3 | 20.7 | 20.8 | -- | -- | -- | -- |
| Seeley Cr. R.S. No. 1 | 48 | 10,000 | 3/29/39 | 53.9 | 20.0 | 37.1 | 30.4 | 21.9 | 20.7 | ) | | | |
| Seeley Cr. R.S. No. 2 | 48A | 10,000 | 3/29/39 | 37.7 | 12.8 | 33.7 | 20.8 | 15.0 | 15.9 | ) 22.5 | 75.5 | 92.0 | |
| SAN PITCH RIVER: | | | | | | | | | | | | | |
| Mammoth Ranger Station | 42 | 8,800 | 3/30/39 | 41.8 | 16.8 | 40.2 | 31.2 | 26.8 | 22.4 | 29.0 | 57.9 | 77.2 | -- |
| G.F.E.S. Oaks Ran. Sta. | 44 | 7,550 | 3/30/39 | 14.0 | 4.2 | 30.0 | 9.8 | 8.7 | 8.6 | -- | -- | -- | -- |
| G.F.E.S. Headquarters | 45 | 8,700 | 3/28/39 | 40.7 | 15.3 | 37.6 | 23.5 | 18.4 | 17.8 | -- | -- | -- | -- |
| G.F.E.S. Meadows | 46 | 10,000 | 3/29/39 | 57.1 | 20.8 | 36.4 | 28.1 | 21.6 | 22.4 | -- | -- | -- | -- |
| G.F.E.S. Alpine | 47 | 10,240 | 3/29/39 | 55.6 | 20.5 | 36.8 | 29.3 | 20.7 | 20.8 | -- | -- | -- | -- |
| SEVIER RIVER: | | | | | | | | | | | | | |
| Gooseberry Ranger Sta. | 50 | 8,400 | 3/27/39 | 28.5 | 10.3 | 36.2 | 9.5 | 12.3 | 10.2 | -- | -- | -- | -- |
| Fish Lake | 51 | 8,700 | 3/25/39 | 18.3 | 6.1 | 33.4 | 7.6 | 7.2 | 7.0 | -- | -- | -- | -- |
| Kimberly Mine (Lower) | 52 | 8,300 | 3/28/39 | 31.9 | 9.4 | 29.5 | 8.0 | 15.2 | 16.1 | ) | | | |
| Kimberly Mine (Upper) | 52-A | 8,900 | 3/28/39 | 32.6 | 12.0 | 36.8 | 15.0 | 24.4 | 19.6 | ) 13.1 | 84.0 | 135.8 | -- |
| Widtsoe-Escalante Sum. | 53 | 9,500 | 3/31/39 | 19.8 | 7.4 | 37.2 | 5.0 | 14.7 | 11.1 | 11.6 | 63.7 | 95.7 | -- |
| Bryce Canyon | 54 | 8,000 | 3/30/39 | 6.2 | 3.9 | 62.9 | | 13.6 | 8.5 | -- | -- | -- | -- |
| Panguitch Lake | 55 | 8,200 | 3/25/39 | 14.0 | 6.0 | 42.9 | 4.2 | 11.5 | 9.9 | 5.9 | 101.7 | 167.8 | Wet |
| Gravel Springs Junction | 56 | 7,500 | 3/28/39 | No | Snow | | 3.3 | 13.7 | 8.8 | | | | |
| Harris Flat Ranger Sta. | 57 | 7,700 | 4/1/39 | 8.3 | 3.6 | 43.4 | 10.5 | 21.2 | 13.4 | 12.4 | 29.0 | 108.1 | -- |
| Duck Creek Spring | 58 | 8,560 | 3/29/39 | 28.8 | 10.1 | 35.1 | 15.2 | 28.9 | 20.1 | -- | -- | -- | -- |
| Cedar Breaks | 59 | 10,200 | 3/30/39 | 58.8 | 18.7 | 31.8 | 24.3 | 41.2 | 29.1 | -- | -- | -- | -- |
| BEAVER RIVER: | | | | | | | | | | | | | |
| Merchants Valley | 63 | 8,200 | 4/1/39 | 14.4 | 6.1 | 42.4 | 14.9 | 16.8 | 14.6 | 11.5 | 53.0 | 126.9 | -- |
| Otter Lake | 63-A | 9,300 | 4/1/39 | 34.3 | 11.3 | 32.9 | 18.0 | 23.0 | 20.7 | -- | -- | -- | -- |
| Big Flat | 63-B | 10,000 | 3/31/39 | 44.3 | 13.9 | 31.4 | 23.1 | 26.4 | 23.4 | -- | -- | -- | -- |

Table IV (cont.)

UTAH COOPERATIVE SNOW SURVEYS - 1938-39
(Data for all Snow Courses)

| SNOW COURSES BY DRAINAGE AREAS | Course No. | Elevation in Feet | Date of Survey | Depth of Snow in Inches | Water Content of Snow in Inches | Density in Percent | Corresponding Water Content | | | Normal Water Content in Snow to April 1st in inches | Water Content of Snow on Date of Survey in % of Normal | Corresponding Percent Last Year | Moisture Condition Under Snow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1936 | 1937 | 1938 | | | | |
| COAL CREEK: | | | | | | | | | | | | | |
| Cedar Breaks | 59 | 10200 | 3/30/39 | 58.8 | 18.7 | 31.8 | 24.3 | 41.2 | 29.1 | -- | -- | -- | -- |
| Co-op Flat | 60 | 9500 | 3/31/39 | 34.4 | 13.1 | 38.1 | 16.8 | 31.2 | 24.3 | 19.0 | 69.0 | 127.7 | Moist |
| Webster Flat | 61 | 9200 | 3/30/39 | 39.3 | 14.0 | 35.6 | 18.7 | 30.0 | 27.6 | 18.6 | 75.3 | 148.4 | Moist |
| VIRGIN RIVER: | | | | | | | | | | | | | |
| Gravel Springs Junct. | 56 | 7500 | 3/28/39 | No | Snow | | 3.3 | 13.7 | 8.8 | | | | |
| Harris Flat Ranger S. | 57 | 7700 | 4/1/39 | 8.3 | 3.6 | 43.4 | 10.5 | 21.2 | 15.4 | 12.4 | 29.0 | 108.1 | -- |
| Duck Creek Ranger St. | 58 | 8560 | 3/29/39 | 28.8 | 10.1 | 35.1 | 15.2 | 28.9 | 20.1 | -- | -- | -- | -- |
| Cedar Breaks | 59 | 10200 | 3/30/39 | 58.8 | 18.7 | 31.8 | 24.3 | 41.2 | 29.1 | -- | -- | -- | -- |
| Co-op Flat | 60 | 9500 | 3/31/39 | 34.4 | 13.1 | 38.1 | 16.8 | 31.2 | 24.3 | 19.0 | 69.0 | 127.7 | Moist |
| Webster Flat | 61 | 9200 | 3/30/39 | 39.3 | 14.0 | 35.6 | 18.7 | 30.0 | 27.6 | 18.6 | 75.3 | 148.4 | Moist |
| SANTA CLARA RIVER: | | | | | | | | | | | | | |
| Pine Valley | 62 | 9150 | 4/1/39 | 39.9 | 14.1 | 35.3 | | 23.7 | 23.8 | -- | -- | -- | -- |
| LA SAL & BLUE MOUNTAIN: | | | | | | | | | | | | | |
| La Sal Mountain | 64 | 8500 | 3/28/39 | 22.4 | 6.8 | 30.3 | 4.1 | 11.2 | 7.8 | -- | -- | -- | -- |
| Buckboard Flat | 65 | 9000 | 3/28/39 | 33.2 | 13.8 | 41.6 | 7.9 | 24.4 | 14.4 | -- | -- | -- | -- |